>cmfocus

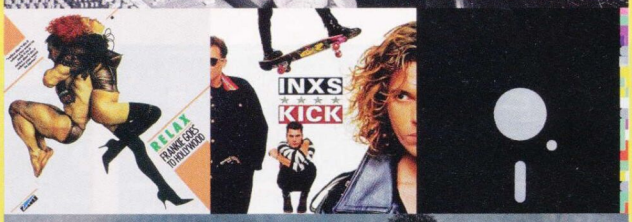
1980S POP

The 80s was the decade of electronic revolution as digital sampling and synthesis took off. Join the revival as we reveal how to recreate the era's defining sounds

cm DVD

ON THE DVD

Audio files to accompany the walkthroughs are in the **Tutorial Files** folder



> Affordable music technology sparked a musical revolution in the 1980s, but it wasn't just new-wavers and experimentalists who took advantage of it. Amazing innovations such as digital sampling and synthesis, and more powerful drum machines meant that pop producers could create entirely electronic productions that – unlike the output of Kraftwerk, their contemporaries and the 70s prog rock artists preceding them, who came at synthesis and sequencing from a cerebral, high-concept angle – could truly work as commercial dancefloor and radio fodder. Electronic music was no longer the preserve of the beard-stroker, and as techno emerged and hip-hop developed, it became clear that the new generation of gear had changed everything.

As electronic sounds started to infiltrate both the overground and underground, programmed beats and synthesised and sampled sounds became an accepted part of pop production. This was largely thanks to commercial producers like Stock, Aitken and Waterman, and record labels like ZTT – music factories that were masters of harnessing the artistic and commercial potential of new studio technology.

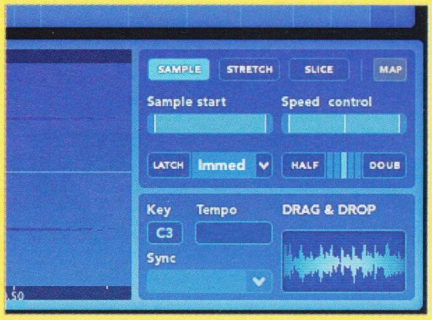
These 80s sounds are very much en vogue at the moment, influencing producers like Russ Chimes and Michael Cassette, amongst others. In this tutorial, we'll show you how you can recreate a range of classic 80s sounds using nothing but your DAW and a few choice plug-ins. Today's music software makes it possible for all of us to quickly, easily and cheaply create sounds that would have taken a great deal of time, effort and equipment to achieve just a couple of decades ago.

"As techno emerged and hip-hop developed, it became clear that the new gear had changed everything"

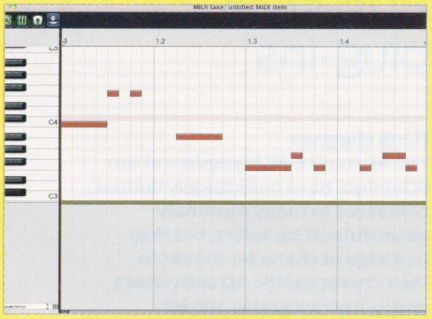
You'll find all the referenced samples and even some of the instruments and effects you need on the **cm** DVD – so load it up and prepare to get funky, 80s style.

> Step by step Playing pitched samples with UVI Workstation

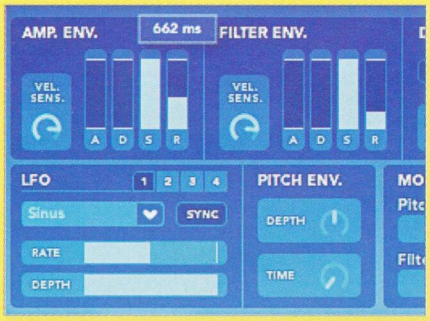
1 > UVI Workstation is a great free tool for sampling. Download it from **www.uvisoundsource.com**, install it, start your DAW and load the instrument on a MIDI track. To load a sample, copy **Vocal Snippet.wav** from the **Tutorial Files\CM Focus** folder on the **cm** DVD onto your hard disk, and drag it onto one of UVI Workstation's instrument slots.



2 > You can now play the sample up and down your MIDI keyboard and in your DAW's sequencer. UVI Workstation's sample playback mode is set to timestretch by default, meaning that playback speed remains constant regardless of what note is played. Select the **Loop** tab and click the **Sample** button to the immediate right of the waveform display.

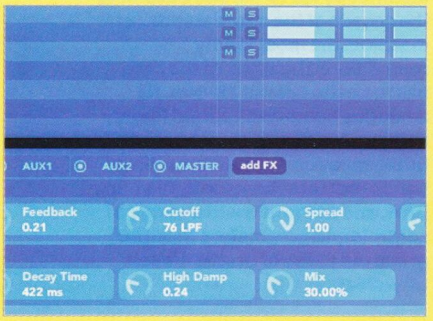


3 > The speed of the sample will now change along with the pitch, so if you play the sample an octave up from the root note, it'll play twice as fast. This is in keeping with early 80s samplers, which didn't offer independent pitchshifting and timestretching. Sequence a MIDI pattern like the one shown here.



4 > The patch has a quick release phase by default, which is good for getting snappier-sounding stuttered sequences. However, you can get some interesting results through the use of longer release times that allow notes to overlap more obviously. In UVI Workstation, click the **Edit** tab and turn the Amplitude Envelope's **R**elease time up to **662ms**.

5 > Now, when you play the sequence back, you'll hear the the effect of the notes overlapping. Despite the longer release time, the vocal can sound a bit dry, so let's add some effects. Click the **FX** tab, then the **Add FX** button. Select **Delay»Ping Pong Delay»Before Eight** and click **OK**. This simple delay effect isn't too overpowering, adding just a touch of stereo width to the sound.

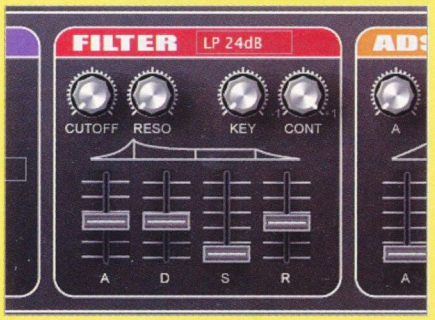


6 > The delay may be too busy for your taste or the project you're working on, in which case reverb can be used to similar effect. Bypass the Delay and use the **Add FX** button again, this time going for **Reverberation»Simple Reverb» Short Verb**. This effect is quite subtle, so turn the **Mix** knob up to **30%** to make it a little more obvious.

> Step by step Making a brassy synth patch with pulse width modulation

1 > Brassy 80s synth stabs are easy to make with most virtual analogue synths. For this example we're using TAL-NoiseMaker, which you can find on the **cm** DVD or Togu Audio Line's website (**kunz.corrupt.ch**). Start by turning the **Sub** oscillator down in the Master panel and changing Osc 1's waveform to **Pulse**.

2 > We want to modulate the pulse width to give it a natural-sounding movement. To do this, set LFO 1's destination to **PW**, **Amount** to **0.3144**, and **Rate** to **4.26Hz**. Set the **Release** time of the Amplitude Envelope to **0.36** so that it doesn't click at the end, but still stops quite sharply and snappily.



3 > In the Filter panel, turn the **Cutoff** all the way down and the **Cont**our all the way up. Copy the envelope settings shown here. This produces a quick swell with each note played. In the Master section, change the number of **Voices** from **Mono** to **6** so that you can play chords, then turn the **Volume** down to **-11dB**, so that you don't overload the channel. Finally, activate Chorus II to get that glossy 80s sheen.

Four awesome 80s-style plug-ins

112dB Morgana

The Akai and E-MU samplers of the 80s might have been hugely limited compared to today's insanely powerful soft samplers, but they had bags of character thanks to their characteristic AD converters and lo-fi sample rates and bit depths. 112dB's Morgana aims to recreate the feel of early samplers with a straightforward approach to sample playback and a gritty sound.
www.112db.com

d16 Nepheton

While the available of cheap digital technology led to the 80s becoming the decade of the affordable drum machine, the most fondly remembered beatbox of the time has to be the Roland TR-808. Its analogue beats don't sound hugely realistic, but they sure do bang! d16's 808 emulation Nepheton enables you to recreate them easily in your DAW, and features a wider range of controls and parameters than the grand old dame of drums herself.
www.d16.pl

GForce Minimonsta

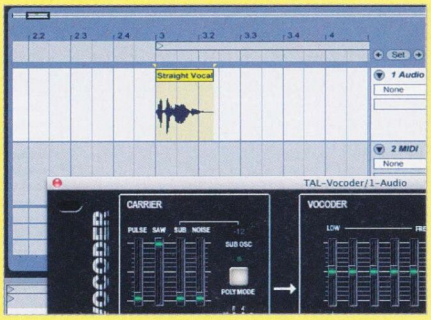
The Moog Minimoog might have been discontinued in 1981, but its phat and funky analogue bass tones made it an 80s staple. The original synth was an absolute masterpiece of design: simple enough to be cheaply manufactured and easy for non-boffins to understand, but powerful enough to give the user access to a huge creative palette. The Minimonsta software emulation adds some handy extras (such as more LFOs) while retaining all the charm of the original instrument.
www.gforcesoftware.com

Native Instruments FM8

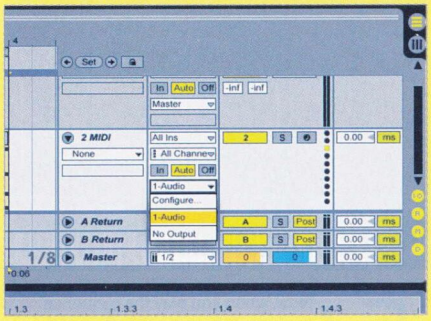
Yamaha's DX7 introduced the world at large to the intriguing sound of frequency modulation synthesis. This technique generated crystal-clear digital tones that were put to good use creating punchy bass sounds and tinkling electric piano patches. Native Instruments' FM8 takes the DX7 and cranks it up a notch, featuring flexible routing, built-in filters and effects, plus a choice of waveforms.
www.native-instruments.com

> Step by step Making robot vocals with TAL-Vocoder

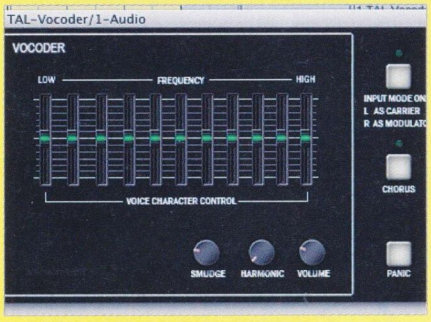
1 > Nothing says retro 80s futurism quite like the robotic sound of vocoded vocals, and there are plenty of plug-ins out there that can give you this effect. One excellent freeware vocoder is Togu Audio Line's TAL-Vocoder, which you can find on the **cm** DVD or download from **kunz.corrupt.ch**. Start by inserting the effect into an audio track.



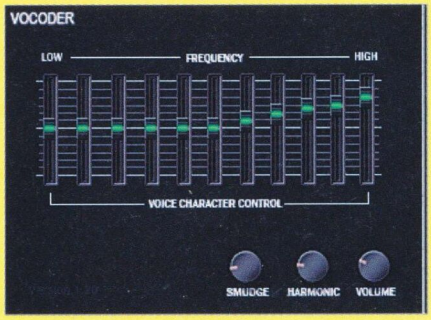
2 > You'll need some vocals to vocode, so copy **Straight Vocal.wav** from the **Tutorial Files\CM Focus** folder on the **cm** DVD to your hard drive, and drag it onto the audio track. You won't hear anything on playback yet, because as well as the 'modulator' input (the vocal in this case), the vocoder needs a 'carrier' input too – usually some kind of synth.



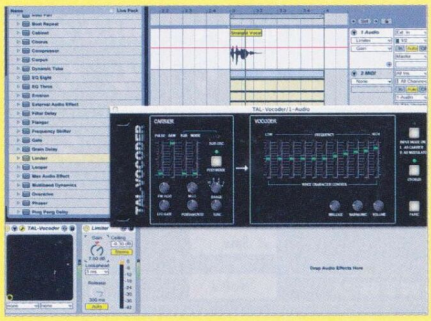
3 > We could use a separate synth for our carrier, but TAL-Vocoder has one built in that will do the job – you just need to route some MIDI to it. Create a MIDI track, sequence a simple sustained chord and route this to the audio track – how you do this will depend on the DAW you're using, if you're unsure, consult your software's documentation.



4 > Activate TAL-Vocoder's **Poly** mode and sequence a big chord. The way a vocoder works means that the thicker and fuller the input signal, the more intelligible the vocal will be. TAL-Vocoder's output will likely overload the channel, so turn down the **Volume** knob at the bottom of the interface to prevent this from happening.

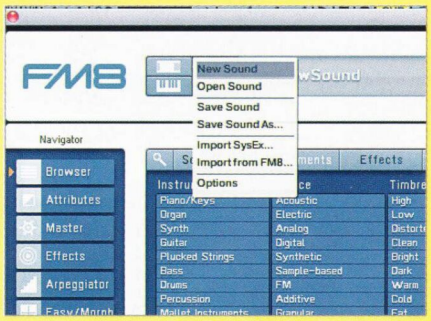


5 > On playback you'll hear the vocoded vocal, but it's not that intelligible. To get better results, turn the **Range** control up to **4**, then increase the vocoder section's highs using the graphic EQ on the right-hand side of the panel. Next, set both the **Smudge** and **Harmonic** controls to 9 o'clock.

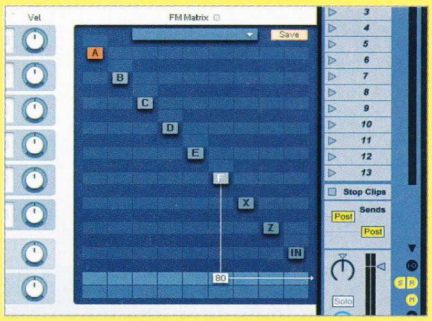


6 > You can give the sound stereo width by activating the **Chorus** button on the right-hand side of the effect's interface. TAL-Vocoder outputs with quite a wide dynamic range, so you'll probably find that putting a limiter after the effect enables you to get a more consistent, louder volume level.

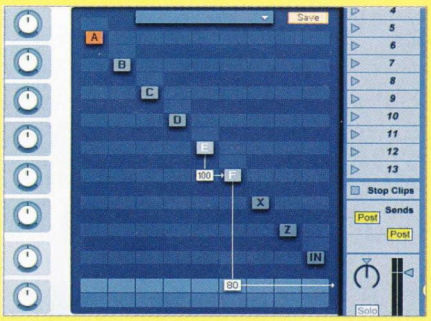
> Step by step Creating FM bass sound with FM8



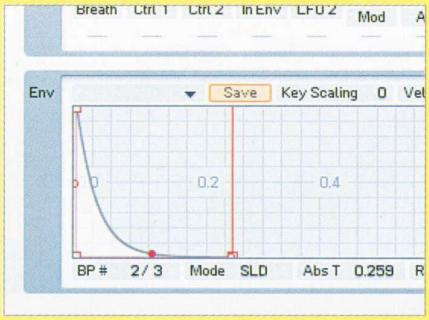
1 > Synth bass sounds first became popular in the 80s. Affordable frequency modulation (FM) synthesis, introduced by the arrival of cheap digital synths like Yamaha's DX7, gave producers exciting new ways to make big bass noises. FM8 is one of the best FM synths around, so load it up in your DAW and select **File»New Sound**. To get the demo, visit **www.native-instruments.com**.



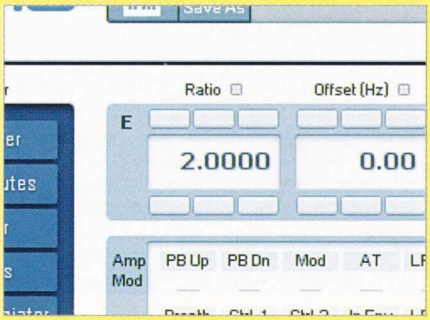
2 > FM8's default patch is a basic sine wave oscillator. We're going to turn this into something with some dynamic harmonic movement without resorting to more complex oscillator waveshapes or filters. Click the **Expert** button on the left-hand panel to bring up the synth's routing matrix. You'll see that just one of FM8's operators (**F**) is active.



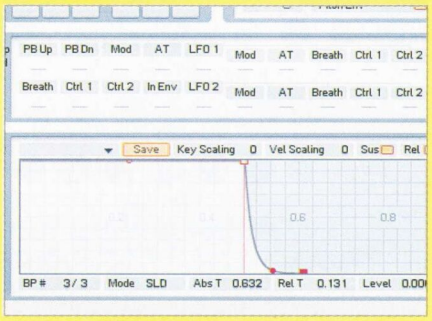
3 > Activate operator E by right-clicking it. This won't make any difference to the sound at first. To change that, drag up on the space under **E** and to the left of **F**, stopping at any value up to **100**. The sound will change from a pure sine to a more complex buzz.



4 > We want the sound to move quickly from the buzz to the pure sine every time a note plays. To do this, we need to change the amplitude envelope of operator E. Click operator **E** to call up its properties in the centre of the FM8 interface. Drag the square at the top right-hand corner of the envelope down and to the left to get a shape like the one shown here.

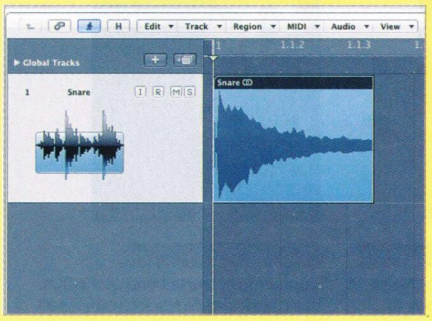


5 > Now when you play a note, you'll hear that it has a punchy attack at the start and then quickly becomes a smooth bass tone. It's possible to introduce more pleasing harmonics to the sound by increasing operator E's **Ratio**. Set it to **2.000** and you'll hear the sound develop a more obvious 'square-wave' feel.

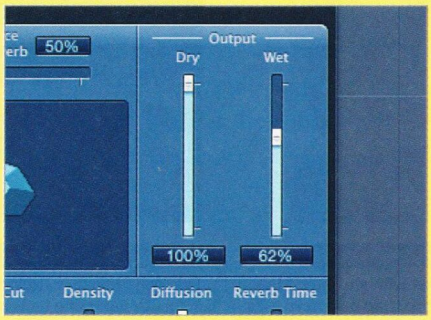


6 > Turn down the **E > F** modulation level until you get a sound that's not too obvious but still packs a punch: **70** is a good compromise. Finally, click operator F and drag the square at the bottom right-hand corner of the envelope to the right for a little release – this stops the sound clicking when it ends, resulting in a smooth FM bass with plenty of bite.

> Step by step Making big 'gated reverb' snare drum sounds



1 > One of the defining sounds of the 80s was the huge-yet-tight snare drum – a sound that's achieved using a combination of reverb and gate. Start by copying **Snare.wav** from the **Tutorial Files\CM Focus** folder on the **cm** DVD to your hard drive, then drag it onto a track in your DAW.



2 > First, we need to add a reverb. We're using Logic Express for this walkthrough, and its PlatinumVerb plug-in will give us the perfect sound for this kind of effect. The default settings are nice, but we need more: turn the **Wet** level up to **62%** to get a really obvious reverb.

3 > The tail of the reverb is very long – it's not the snappy sound we're after, and it'll eat up headroom in a mix. To fix this, we add Logic's Noise Gate as an insert after the PlatinumVerb. Set the **Threshold** to **-23dB**. Play the project back to hear how you get the big, booming start of the reverb, before the Gate snaps the volume level down to nothing.

> Step by step Programming retro lead synth patches with ZebraCM

1 > Hard synced lead noises are great for catching the ear's attention, and can be very expressive thanks to their vocal-like qualities. It's easy to make this kind of sound with the **cm** Studio's ZebraCM synth, which has dedicated hard sync oscillators. Load the synth up in your DAW and turn the filter **Cutoff** knob up to its maximum possible level.

2 > We only need a single oscillator and a single voice for this sound, so turn Oscillators 2's **Volume** level down to minimum and set Oscillator 1's voice mode to **Single**. Activate the hard sync oscillator by clicking the **Sync** button in Oscillator 1's panel, then set the **Env1**-to-**Sync** modulation depth to **33.80**.

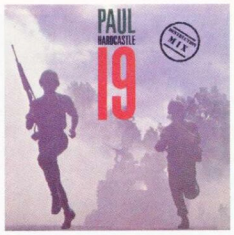
3 > We have to use Env1 because its hardwired to the Sync modulation level – it also controls the sound's overall volume, however. We can get around this using the **VCA** parameter in the panel at the centre of the interface. Change it from **Env1** to **Gate**.

4 > Now the volume level of the sound will respond only to whether the note is playing or not, rather than using a dynamic envelope curve. Copy the Envelope 1 **Decay** and **Sustain** settings shown here to produce a long sweep with a broad range. Now strap on your MIDI keytar, play the patch back in the C4-C6 range and rock out! (Or just use your regular keyboard, of course.)

5 > If the sound is too synthy for you and you want to get your rock on a bit harder, that's no problem. Save your project and install Camel Audio's Camel Crusher distortion plug-in, which you can download from **www.camelaudio.com**. Load up the project, add Camel Crusher as an insert on the ZebraCM channel, and copy the settings shown here.

6 > This ZebraCM patch doesn't sound particularly guitar-like at the moment, but we can remedy that with a few simple tweaks. Set the **Env1**-to-**Sync** modulation depth to **22.60** to make it less drastic, and set the **Attack** and **Decay** times to **70** for a long, soaring sweep sound. For the final touch, activate ZebraCM's delay effect by double-clicking the **ModFX1** button at the bottom left of the interface.

Four era-defining 80s records

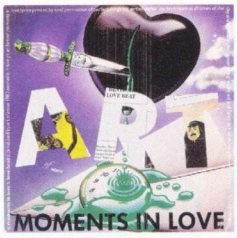


Paul Hardcastle, *19*

19 is a curious beast. It's a straight-up dance banger based around a depressing, stuttered sample from a documentary on the Vietnam war, layered over groovy beats with fat basslines and euphoric synth chords. In a word: bonkers! Its idiosyncratic style is matched only by the quality of its production, and the track still sounds fresh today.
www.tinyurl.com/437k6w

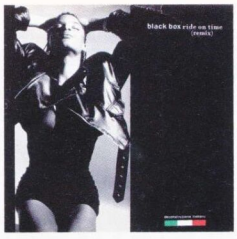
Chaka Kahn, *I Feel For You*

A Prince cover with stuttered Melle Mel soundbites, slap bass, tom rolls and a barrage of synth stabs and chords at every turn: it really doesn't get much more 80s than this. Inventive touches abound in *I Feel For You*, including a crazy Stevie Wonder harmonica line, dramatic drum edits and great interplay between guitar and synth bass.
www.tinyurl.com/yg9bq3r



The Art of Noise, *Moments In Love*

Fairlight funksters The Art Of Noise took 80s sampling technology to strange places: another of their hits *Close (to the Edit)* sounds like a joke today, with its pitched car ignition samples, orchestral stab overload and manic bassline. *Moments In Love*, a psychedelic slow jam, has fared better. Its reverbed snares and heavy bass line give it a proto-dubstep feel.
www.tinyurl.com/yv9c89



Black Box, *Ride On Time*

Appearing at the tail-end of the 80s, this classic dance track combines all the many excesses of the era's over-the-top production ethos to create a stone-cold classic. We're talking pitched sampled vocals, strident programmed beats, a funky synth bassline and, of course, those awesome PCM pianos, brass and strings. Take it away, girlfriend! **cm**
www.tinyurl.com/2fquhae